

LISTING NETWORKS AND DEFAULT BRIDGE NETWORK

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
4c048766a085        bridge             bridge             local
dba383645f84        host               host               local
70a6f30529df        none              null               local

C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker network inspect bridge
[
  {
    "Name": "bridge",
    "Id": "4c048766a085a25dca63ac27798d6b30a503c441577bb5b889f29b85ef13c1bc",
    "Created": "2021-05-14T06:51:07.1906386Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": null,
      "Config": [
        {
          "Subnet": "172.17.0.0/16",
          "Gateway": "172.17.0.1"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {},
    "Options": {
      "com.docker.network.bridge.default_bridge": "true",
      "com.docker.network.bridge.enable_icc": "true",
      "com.docker.network.bridge.enable_ip_masquerade": "true",
      "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
      "com.docker.network.bridge.name": "docker0",
      "com.docker.network.driver.mtu": "1500"
    },
    "Labels": {}
  }
]
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
asti/ping	latest	ebe1d93fdd9b	36 minutes ago	138MB
astilagmay/ping	firstimagepush	ebe1d93fdd9b	36 minutes ago	138MB
httpd	2.4	f3cffeea581b	2 days ago	138MB
ubuntu	16.04	aefd7f02ae24	2 weeks ago	134MB

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker run --rm -d --name dummy astilagmay/ping:firstimagepush
da3ebe8b6cef840e82531685d9d6623fea6758de304434031508a90262f5a348
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker network inspect bridge
```

```
[
  {
    "Name": "bridge",
    "Id": "4c048766a085a25dca63ac27798d6b30a503c441577bb5b889f29b85ef13c1bc",
    "Created": "2021-05-14T06:51:07.1906386Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": null,
      "Config": [
        {
          "Subnet": "172.17.0.0/16",
          "Gateway": "172.17.0.1"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {
      "da3ebe8b6cef840e82531685d9d6623fea6758de304434031508a90262f5a348": {
        "Name": "dummy",
        "EndpointID": "e688604749fba80b1e402a4670953b8b641d9eafb6eb3d4fed66bad71b460e17",
        "MacAddress": "02:42:ac:11:00:02",
        "IPv4Address": "172.17.0.2/16",
        "IPv6Address": ""
      }
    },
    "Options": {
      "com.docker.network.bridge.default_bridge": "true",
      "com.docker.network.bridge.enable_icc": "true",
      "com.docker.network.bridge.enable_ip_masquerade": "true",
      "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
      "com.docker.network.bridge.name": "docker0",
      "com.docker.network.driver.mtu": "1500"
    },
    "Labels": {}
  }
]
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>_
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker run --rm -d --name pinger astilagmay/ping:firstimagepush
9946e8044b8e103a42c9edb2dac51c804bf6d487afc204fe9e9e7e8ee04bc000
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
9946e8044b8e	astilagmay/ping:firstimagepush	"sh -c 'ping \$PING_T..."	18 seconds ago	Up 16 seconds		pinger
da3ebe8b6cef	astilagmay/ping:firstimagepush	"sh -c 'ping \$PING_T..."	About a minute ago	Up About a minute		dummy

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker logs pinger
```

```
PING google.com (172.217.163.238) 56(84) bytes of data.
```

```
64 bytes from 172.217.163.238: icmp_seq=1 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=2 ttl=37 time=26.4 ms
64 bytes from 172.217.163.238: icmp_seq=3 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=4 ttl=37 time=26.3 ms
64 bytes from 172.217.163.238: icmp_seq=5 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=6 ttl=37 time=26.7 ms
64 bytes from 172.217.163.238: icmp_seq=7 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=8 ttl=37 time=26.4 ms
64 bytes from 172.217.163.238: icmp_seq=9 ttl=37 time=26.0 ms
64 bytes from 172.217.163.238: icmp_seq=10 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=11 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=12 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=13 ttl=37 time=26.4 ms
64 bytes from 172.217.163.238: icmp_seq=14 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=15 ttl=37 time=26.9 ms
64 bytes from 172.217.163.238: icmp_seq=16 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=17 ttl=37 time=26.0 ms
64 bytes from 172.217.163.238: icmp_seq=18 ttl=37 time=26.0 ms
64 bytes from 172.217.163.238: icmp_seq=19 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=20 ttl=37 time=25.8 ms
64 bytes from 172.217.163.238: icmp_seq=21 ttl=37 time=26.0 ms
64 bytes from 172.217.163.238: icmp_seq=22 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=23 ttl=37 time=26.4 ms
64 bytes from 172.217.163.238: icmp_seq=24 ttl=37 time=26.0 ms
64 bytes from 172.217.163.238: icmp_seq=25 ttl=37 time=26.0 ms
64 bytes from 172.217.163.238: icmp_seq=26 ttl=37 time=26.4 ms
64 bytes from 172.217.163.238: icmp_seq=27 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=28 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=29 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=30 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=31 ttl=37 time=26.0 ms
64 bytes from 172.217.163.238: icmp_seq=32 ttl=37 time=27.1 ms
64 bytes from 172.217.163.238: icmp_seq=33 ttl=37 time=25.9 ms
64 bytes from 172.217.163.238: icmp_seq=34 ttl=37 time=25.8 ms
64 bytes from 172.217.163.238: icmp_seq=35 ttl=37 time=26.2 ms
64 bytes from 172.217.163.238: icmp_seq=36 ttl=37 time=25.9 ms
64 bytes from 172.217.163.238: icmp_seq=37 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=38 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=39 ttl=37 time=26.9 ms
64 bytes from 172.217.163.238: icmp_seq=40 ttl=37 time=26.3 ms
64 bytes from 172.217.163.238: icmp_seq=41 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=42 ttl=37 time=26.4 ms
64 bytes from 172.217.163.238: icmp_seq=43 ttl=37 time=26.8 ms
64 bytes from 172.217.163.238: icmp_seq=44 ttl=37 time=25.9 ms
64 bytes from 172.217.163.238: icmp_seq=45 ttl=37 time=27.7 ms
64 bytes from 172.217.163.238: icmp_seq=46 ttl=37 time=26.1 ms
64 bytes from 172.217.163.238: icmp_seq=47 ttl=37 time=26.2 ms
```

MANAGING CUSTOM NETWORKS

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker network create skynet
6bb3a2a8b00d9256b35a501e85d3d96ba093e33510d3c6ee62e959ef9dea68d1
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker network ls
```

NETWORK ID	NAME	DRIVER	SCOPE
4c048766a085	bridge	bridge	local
dba383645f84	host	host	local
70a6f30529df	none	null	local
6bb3a2a8b00d	skynet	bridge	local

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker network inspect skynet
```

```
[
  {
    "Name": "skynet",
    "Id": "6bb3a2a8b00d9256b35a501e85d3d96ba093e33510d3c6ee62e959ef9dea68d1",
    "Created": "2021-05-14T11:29:17.4772381Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": {},
      "Config": [
        {
          "Subnet": "172.18.0.0/16",
          "Gateway": "172.18.0.1"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {},
    "Options": {},
    "Labels": {}
  }
]
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>
```

ADDING CONTAINERS TO A NETWORK

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker run --rm -d --network skynet -e PING_TARGET=dummy --name pinger astilagmay/ping:firstimagepush
6c9e3d2e7936d85a633117dd4cd069346394307ef0f15a36d40ef9a81fc6f2da
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker logs pinger
```

```
PING dummy (172.18.0.2) 56(84) bytes of data:
64 bytes from dummy.skynet (172.18.0.2): icmp_seq=1 ttl=64 time=0.059 ms
64 bytes from dummy.skynet (172.18.0.2): icmp_seq=2 ttl=64 time=0.048 ms
64 bytes from dummy.skynet (172.18.0.2): icmp_seq=3 ttl=64 time=0.050 ms
64 bytes from dummy.skynet (172.18.0.2): icmp_seq=4 ttl=64 time=0.047 ms
```

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>
```

CONNECTING BETWEEN CONTAINERS IN A NETWORK

```
C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker run --rm -d --name gadgetdb --network skynet -p 5432 -e POSTGRES_PASSWORD=password postgres
31edefb025e14a45d649f5eb3fb26e2f852e4ceae0e5494700c42eb2329f8635

C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker run --rm -d --name widgetdb --network skynet -p 5432 -e POSTGRES_PASSWORD=password postgres
f0e134d5dae64ccf6b82c13fd46c415de601954c089a3fd38996f39de06cb9

C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                               NAMES
f0e134d5dae6   postgres  "docker-entrypoint.s..." 2 seconds ago  Up 1 second   0.0.0.0:55940->5432/tcp            widgetdb
31edefb025e1   postgres  "docker-entrypoint.s..." 9 seconds ago  Up 7 seconds   0.0.0.0:55939->5432/tcp            gadgetdb

C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker exec -it widgetdb /bin/bash
root@f0e134d5dae6:/# psql -U postgres
psql (13.2 (Debian 13.2-1.pgdg100+1))
Type "help" for help.

postgres=# \q
root@f0e134d5dae6:/# psql -U postgres -h gadgetdb
Password for user postgres:
psql: error: FATAL: password authentication failed for user "postgres"
root@f0e134d5dae6:/# psql -U postgres -h gadgetdb
Password for user postgres:
psql (13.2 (Debian 13.2-1.pgdg100+1))
Type "help" for help.

postgres=# \q
root@f0e134d5dae6:/# exit
exit

C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>docker stop widgetdb gadgetdb
widgetdb
gadgetdb
```

BINDING PORTS TO THE HOST

```
Command Prompt

C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>psql -U postgres -h localhost
Password for user postgres:
psql (13.3, server 13.2 (Debian 13.2-1.pgdg100+1))
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

postgres=# \q

C:\Users\Asti\Desktop\ME8_Containerization_and_Docker\6-networking>
```